Info-Hams Digest   Mon, 11 Jan 93   Volume 93 : Issue   46

Today's Topics:
                          Cq Rtty experts...
                               CTCSS
                         DJ-580 soft case
                            DJ580 mod
                          FM and fences
                          HA5BUS on CNN
                          License Delays
               Mystery VLF receiver - help me identify
                        Need a 3rd hand for S
               Plans for an Extended Double Zepp for 2M
        Stalking the Wily Hacker -- Dayton Hamvention Talk (2 msgs)
          Stalking the Wily Hacker -- talk at Dayton Hamvention

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 11 Jan 1993 07:50:59 GMT
From: nntp.telebit.com!phr@uunet.uu.net
Subject: Cq Rtty experts...
To: info-hams@ucsd.edu

In article <1993Jan9.085756.1@ualr.edu> mauldin@ualr.edu writes:

   > Does anybody know of anything simpler? I looked at HAMCOM, but gee it does
   > its own modem and a lot of other stuff that I don't want. All I want is
   > a very simple ASCII-to-Baudot translation program; and I started to write
   > one myself but then it occurred to me that maybe somebody else has

> already done it. Just something that will turn a PC into a Baudot glass
> Teletype.

    You ought to do it in your existing program. It probably wouldn't
add more than five lines of code.

    Making a Baudot-to-ASCII translation is the sort of task given
to beginning programming students. I suspect that in this case as
well, the solution is being left as an exercise. Hint: use the
integer value of the Baudot code as an index into an array of ASCII
characters, or vice- versa. It is up to you to determine the
proper order of the elements of this array.

Um, don't you also need to reprogram the PC's uarts to read the
5-bit characters, if this is even possible? If not, you might
be able to hack up something where you read the rtty levels through
the status bits of the parallel port. You'd have to do your own
UART in software, with precise timing loops etc. but this is
a well known technique.

Date: 8 Jan 93 17:58:34 GMT
From: deccrl!news.crl.dec.com!random!e2big.mko.dec.com!coolidge%guru.enet.dec.com!
coolidge@decwrl.dec.com
Subject: CTCSS
To: info-hams@ucsd.edu

In reply to:

From: eri316@tijc02.uucp (Ed Ingraham   )
Subject: CTCSS
Message-ID: <1993Jan7.183258.17573@tijc02.uucp>
Organization: Siemens Industrial Automation, Johnson City TN
Date: Thu, 7 Jan 93 18:32:58 GMT
Lines: 14

All this discussion of closed vs open repeaters and CTCSS (which seems
such an attractive solution) brings up the question:

If two stations transmit at the same time on the input of a repeater,
one with the CTCSS which the repeater uses and one without, what comes out
of the repeater transmitter?

If the CTCSS signal is stronger, he comes through. Otherwise, nothing. Right?

Ed Ingraham, WX4S

Siemens Industrial Automation, Inc.
Johnson City, Tennessee
tijc02!eri316@uunet.uu.net

****

Yes, Ed, you are quite correct, because the CTCSS decoding takes place at
baseband audio AFTER demodulation. The really sad part is that this is not
fully understood/appreciated in the Land-Mobile arena, where it's assumed to
be the panacea for their congestion problems. We have that precise situation
here in northern New England where a fire department in the Boston area has
a very powerful repeater outputting on a simplex frequency widely used in
central New Hampshire to dispatch about 35 departments in the region. Although
CTCSS is in use, the handhelds in NH are continually being stepped on by
the Boston area repeater (which only has to serve about 10 square miles; why
they have to be dead full quieting in valleys 70 air miles away is unknown).
Oh, BTW, the department near Boston is eligible and is using many other
frequencies on other bands, making their VHF high-band repeater requirement
a bit dubious anyway. In any case, the FM capture effect continues to work.

73,

Bayard, N1HO

The opinions expressed are solely those of the author and not those of Digital
Equipment Corporation nor any other entity.

Date: Mon, 11 Jan 1993 02:42:47 GMT
From: sdd.hp.com!wupost!darwin.sura.net!sgiblab!tsoft!railroad@network.UCSD.EDU
Subject: DJ-580 soft case
To: info-hams@ucsd.edu

jeffh@ludwig.cc.uoregon.edu (Jeff Hite) writes:

> I'm looking for a soft case for my 580, it's part# ESC-17 and have not
> been able to find one thru the dealers I usually purchase from. Anyone
> know of a store that has any or dealers that stock alot of the Alinco
> accessories?
> Thanks,
> Jeff Hite   KF7SZ
> jeffh@ludwig.cc.uoregon.edu

Well if you call any of the many HROs I am sure they have them in
stock... if not try AES or someother place like it.... they cost about
20.00.... TTYL!!!

MIKE LELAND REDWOOD CITY, ca KD6PIW(Politics in Washington?)

--
Mike Leland (bbs.railroad@tsoft.net)

Date: 10 Jan 93 07:31:32 GMT
From: swrinde!cs.utexas.edu!uwm.edu!ogicse!qiclab!therose!
postmaster@network.UCSD.EDU
Subject: DJ580 mod
To: info-hams@ucsd.edu

Sami Reijonen wrote in a message to All:

 SR> From: squrppi@krk.fi (Sami Reijonen)
 SR> Newsgroups: rec.radio.amateur.misc

 SR> squrppi@krk.fi (Sami Reijonen) writes:
 SR> : This modification widens the listening area to 130 -
 SR> 179.995MHz and to

 SR> Happily, I didn't check the message well enough and I forgot
 SR> to add a small and useless line:

 SR> The mod is the soft mod #212

 SR> Thanks to Dave Jenkins for his kind reminder..
 SR> --

Aaaa... I think I missed something here. This is a mod for the DJ-580? if so
could you post agan please? 8-) I also have the DJ-580 Thanks.

Larry,
N7LBP @ W0RLI.or

Date: 11 Jan 93 10:15:13 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!doc.ic.ac.uk!sot-ecs!
pge90@network.UCSD.EDU
Subject: FM and fences
To: info-hams@ucsd.edu

I fly radio control model aircraft, but recently the club

flying site has been experiencing radio interference problems.

There is no fixed pattern to the interference which can range
from severe on some days to non-existent on others. Some of
the members believe the interference is caused by the recent
addition (some 18 months ago) of a 3 strand wire fence, fig 1,
and that the interference is caused by the fence when the
atmospheric conditions are just right, (general consensus
among members is high humidity). Members that can remember as
far back as 18 months believe these problems did not exist
before 'the fence' --- are they right?

All radio sets are FM and have been tested to conform to the
manufacturers specs.

My question is:-- is this possible??, and if so how can it be
prevented without demolishing the fence, (since the farmer
likes his fence).

Fig 1.

```
    -----#------#-----#-----strand1
        #       #     #
    -----#------#-----#-----strand2
        #       #     #
    -----#------#-----#-----strand3
        #       #     #
       fence posts
```

The layout of the site is:-

```
    -------------------------------nasty fence


                                      4 metres

      @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
      @                               @
      @    Takeoff/landing area        @
      @                               @
      @                               @
```
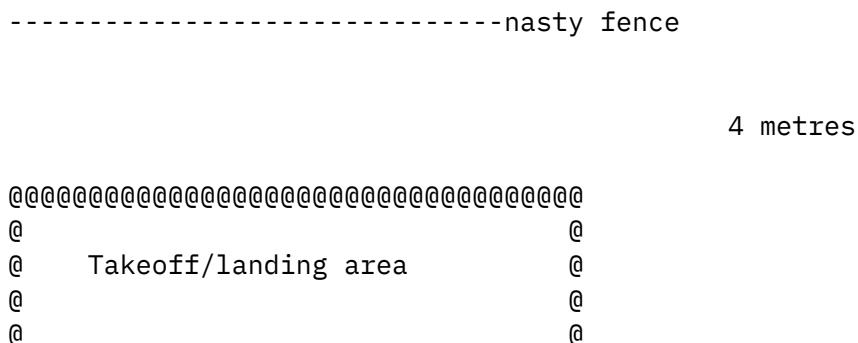
Flight line standing position, about 34 metres from fence.

If it is impossible for a fence to be causing this problem
then the hunt will be on for other radio sources in the area.

Thanks for any help -- please reply to,
pge90@ecs.soton.ac.uk

Date: 10 Jan 1993 23:39:45 GMT
From: news.larc.nasa.gov!eos1.larc.nasa.gov!eckman@ames.arpa
Subject: HA5BUS on CNN
To: info-hams@ucsd.edu

  I saw a story today (Sunday) on Headline News regarding a group
of Hungarians going around the world in a bus. While amateur radio
was never mentioned, the bus did take an identical itinerary to
that of HA5BUS, so I have to assume that they are one and the same.
Also, the side of the bus mentioned the 'Globex Foundation'.
  Seems like these guys have fallen on difficult times. Their
bus was seized by US customs in Long Beach, CA because the foundation
sponsoring the tour went bankrupt and they couldn't meet the shipping
costs. Unless they can come up with $7000, the bus will be auctioned
off.
  Can anyone confirm if these guys are indeed the HA5BUS expedition?

Richard Eckman KO4MR
NASA Langley
eckman@dobson.larc.nasa.gov

Date: Mon, 11 Jan 1993 03:03:35 GMT
From: usc!wupost!emory!sol.ctr.columbia.edu!news.cs.columbia.edu!
popovich@network.UCSD.EDU
Subject: License Delays
To: info-hams@ucsd.edu

In article <Pine.3.05.9301101152.A27815-9100000@uafhp.uark.edu>,
plaws@uafhp.uark.edu (Peter Laws) writes:

> Ya know, maybe if we paid more than $0.56/yr for our licenses...
>
> BUT WAIT!
> The FCC doesn't even get that!!!!!!! That goes to the _volunteer_
> examiners. The _paid_ FCC gets NOTHING. Nothing but headaches from WHINY
> hams.
>
> It's a wonder we get any allocations.
>

> Here's to a $50, 10 year ticket...

I don't know where you got the figure $0.56/yr., but for 1992, the
maximum fee that a VEC could charge for an examination was $5.44,
which for a 10-year license works out to $0.544/yr., not $0.56. Your
implied examination fee of $5.60 sounds about right for 1993, though.
In any case, that $5.44 or $5.60 10-year license is renewable for your
lifetime without additional charge if you don't upgrade (and don't let
it expire out of the grace period so that you need to take the test
again). That's a TESTING fee, not a LICENSE fee.

Besides, and more important, that DOESN'T generally go to the
volunteer examiners. It goes to the _volunteer examiner
coordinators_. The _volunteer examiners_ are allowed to keep only
enough of the testing fee to reimburse them for _out-of-pocket
expenses incurred in preparing, processing, administering, or
coordinating an examination_ that are _necessarily and prudently
incurred_. In other words, the VEs are NOT allowed to make money from
giving amateur radio examinations. And as for the FCC getting
NOTHING, they're a Federal Government agency, so even if we're not
paying them directly, we're paying them, make no mistake about it!
    -Steve

Date: Sun, 10 Jan 1993 22:16:25 GMT
From: usc!cs.utexas.edu!milano!cactus.org!thompson@network.UCSD.EDU
Subject: Mystery VLF receiver - help me identify
To: info-hams@ucsd.edu

I have a small military surplus (airborne) VLF receiver which
I purchased at a hamfest. I ran from 28V and I modifed it for
12V operation. I would like to learn the military i.d. number
for this receiver. It has no manufacturer markings or i.d.
whatsoever. The receiver has the following controls:

6-band bandswitch for the following ranges-

6 - 63kHz
30 - 70 kHz
70 - 125kHz
115 - 185kHz
180 - 280kHz
270 - 420kHz

AM/LSB/USB switch
3kc - 10kc selectivity switch
RF gain control

AF gain control
Tuning

The size is about 1/3 of a cubic foot.

Anybody out there have one of these receivers?
Who made it? Any documentation available?

I added a +20 dB preamp to it and it works quite nicely
with my 1m broadband loop.

Any help from fellow VLF'ers appreciated!

-Charlie Thompson
WB4HVD

Date: 10 Jan 93 18:56:00 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!usenet.ins.cwru.edu!ncoast!flbbs!
larry.mittman@network.UCSD.EDU
Subject: Need a 3rd hand for S
To: info-hams@ucsd.edu

 On 01-06-93 SCOTT RICHARD ROSENFELD wrote to ALL...

 SR> Newsgroups: rec.radio.amateur.misc
 SR> From: ham@wam.umd.edu (Scott Richard Rosenfeld)
 SR> Subject: Re: Need a 3rd hand for Soldering!?
 SR> Message-ID: <1993Jan5.125614.18523@wam.umd.edu>
 SR> Keywords: question
 SR> Date: Tue, 5 Jan 1993 12:56:14 GMT
 SR>
 SR> In article <1993Jan4.222522.20042@news.columbia.edu>
 SR> hyx1@cunixb.cc.columbia.edu (Harry Y Xu) writes:
 SR> >I always feel like my 2 hands are not enough when soldering.
 SR> >1 hand holds the soldering iron;
 SR> >1 holds the solder;
 SR> >another hand is needed to hold the component, or the pliers that hold
 SR> the
 SR> >component to prevent over-heating.
 SR> >
 SR> >Does anyone have a smart solution?
 SR>
 SR> Yup. Get yourself a table-top vise. Nice, free-standing, with a
 SR> heavily
 SR> weighted base. If you have a workbench that you can drill into, your

```
 SR> choices are very broad.  As for where to go to get it:
 SR>
 SR> You can probably pick up something Craftsman at Sears, or something
 SR> else
 SR> at the local hardware store.  There's also a company in California
 SR> called
 SR> Jameco that sells stuff like tools, breadboards, and irons, that would
 SR> probably sell a bench-type vise.
 SR>
 SR> Scott
 SR> NF3I
 SR>
You can also get "The Third Hand" from Radio Shack. This is a
table-top devise with adjustable clips for holding PC boards
at any angle and freeing your hands for soldering.


... OFFLINE 1.42 * Here's a partial score:  Cleveland 10

------------------------------

Date: Mon, 11 Jan 93 04:22:43 GMT
From: swrinde!gatech!destroyer!cs.ubc.ca!alberta!adec23!ve6mgs!
mark@network.UCSD.EDU
Subject: Plans for an Extended Double Zepp for 2M
To: info-hams@ucsd.edu

I would like to share with you all an Antenna I designed and built this
weekend for 2M. The plans as follows:

Cut 1/2" copper pipe into the following pieces:
    2  sections 49" long
    4  sections 8 1/4" long
    3  sections 1" long
Cut 1" wood dowel into the following pieces:
    2  sections, 40 11/16" long
Obtain the following `knick knacks':
    8  1/2" copper pipe elbows
    2  1/2" copper pipe end caps
    1  10-12pF Ceramic Capacitor
    1  N or Union High Frequency Connector
    2  1" Hose clamps
    2  1/2" copper pipe hold down clamps
    6  nails, or screws, as appropriate for above clamps
    1  120" long piece of string used as cross support

1. Build folded phasing section
```

Do not solder yet. Assemble a ring of two 8 1/4" long, two 1" long and four
elbows. Place the ring on a flat surface that you can solder it on. Solder the
elbows to the 1" long pieces at both ends, and solder ONE pair of 8 1/4" long
pieces to the set of elbows. Once cool, remove the unsoldered `U' consisting
of two elbows and one 1" long piece. This ensures that this `U' and the other
`U' consisting of two elbows, one 1"long piece and two 8 1/4" long pieces are
`square and `flat' and `parallel'.

Use the small `U' above to do the same to another large `U' of similar
construction. You should now have two large (8 3/4" long X 2" wide) `U's
and one small (1 1/2" X 2" wide) `U'.

This next part will require some judicious placement of support clamps, and
a `good eye'. Solder one end of each large `U' into the small `U' so that
it forms a square cage:

```
                ____<- One large `U'
               / __/_
              / /   / /
             / / / /<- Other large `U'
            / / / /
           / / / /
          / / / /
    small `U' ->|/   / <- This end is open, try to make this cage `square'
```
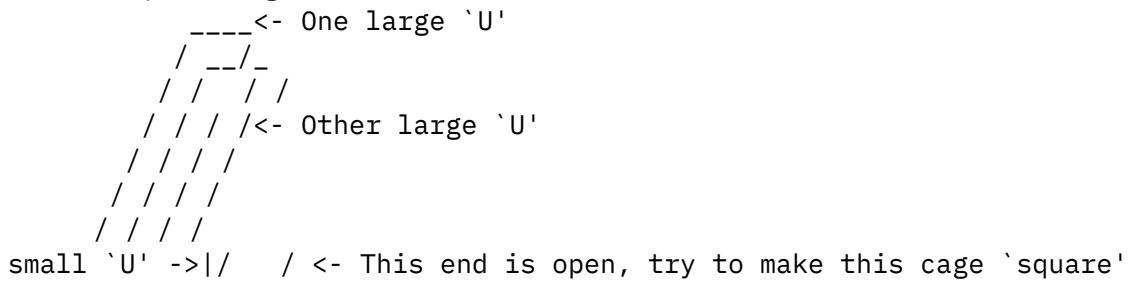
          Figure 1 Folded phasing section.

2. Build pair of 5/8 Wave radiators

Solder end caps to one end of each 49" long, 1/2" copper pipe. On the other
ends, solder the remaining two elbows. Lay the two radiators, end caps
outwards, on a flat soldering surface and solder to the phasing section
(note change of orientation to Figure 1 with respect to the phasing section):

```
                        /|   /|
                       / / / /
                      / / / /
                     / / / /
                    / / / /
                   /___/ /
_____/   /_____
```
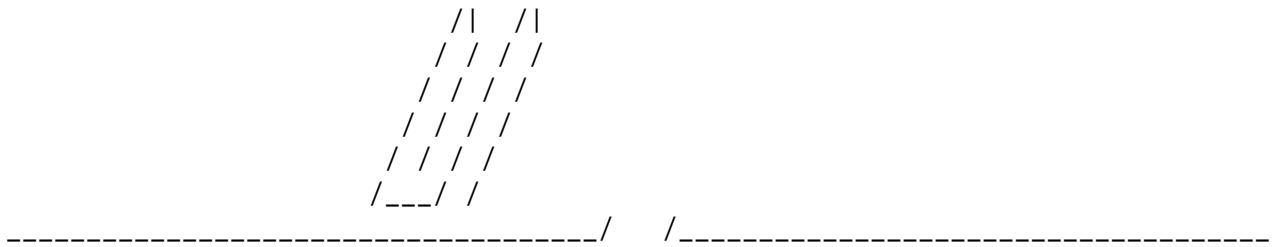
          Figure 2 Extended Double Zepp Radiator

3. Build `Gamma' `hairpin' `phasing stub' (Salyzyn :-) feed system

I can't find this feed arrangement in *any* of my Antenna Handbooks, nor do
I know precisely why it works so well. If you can describe this matching
arrangement better than me, I'd be pleased to hear about it. It accomplishes
several objectives though. We need to cancel some inductive reactance at the

feed point (due to the fact we are using .64 wavelength, rather than the
typical < .625 wavelength radiators in commercial designs), we need about a
4:1 balun to take the characteristic resistive component of the Double Zepp of
200 ohms and bring it down to 50 ohms balanced feed and I require a
mechanically stable vertical Double Zepp. Basically the 10pf (I used precisely
11.2 pF measured on mine) capacitor is tied to the base of one of the 5/8 wave
radiators, the other end of the capacitor is tied to the center conductor of
the feed connector. The ground of the connector is soldered to the small `U'
to place it sort of in the center of the phasing section `cage' facing away
from the phasing section:

```
                         /|          /|
                        / |         / |
                       /  |        /  |
                      /   |       /   |
                     /   /       /   /
                    /   /       /   /
                   /   /       /   /
                  /   /       /   /
                 /   /       /   /
                /   /       /   /
               /   /       /   /
              /_____/      /
                 |  _  |      /
    Feed Connector -> | (_) |\<----Tied to Center conductor
                 |_____| O<----10pF Capacitor
. . . _____/        |/_____ . . .
```
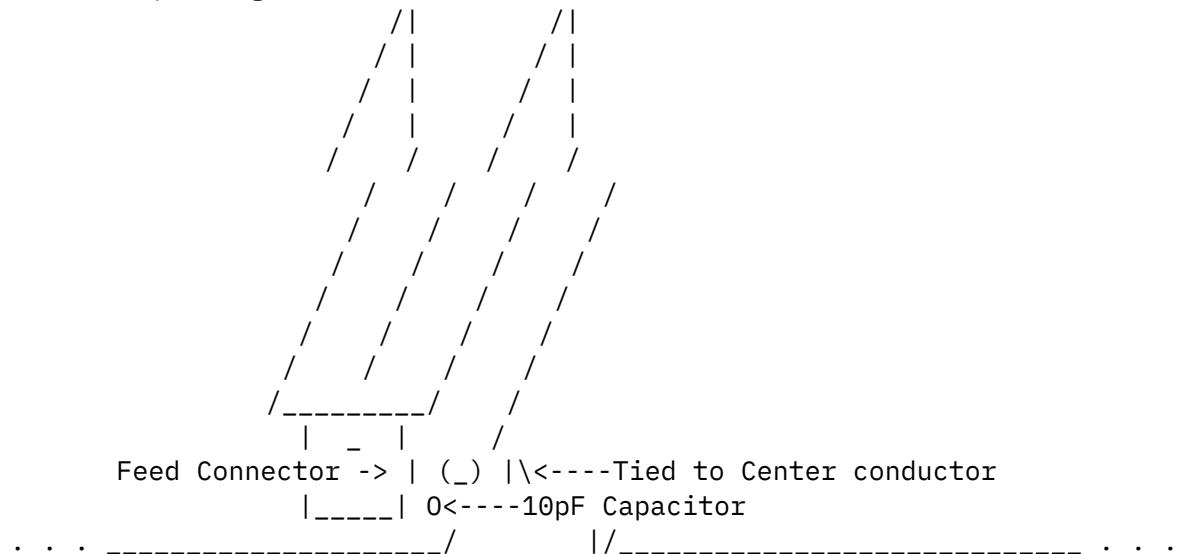
        Figure 3 Feed Arrangement `Blowed Up'

6. Test antenna

Attach an SWR meter to the Feed connector and to a signal source and take
SWR readings across the band. Trim the antenna (I was lucky, I didn't need
to :-) as necessary to achieve a match. I designed this antenna for 145.09,
a local packet channel, and that `happened' to be near the resonant dip
of 1.2:1 match I encountered for this antenna. I performed a couple of
tests on Simplex and repeater frequencies dotted across the 2M band and
found the antenna to be superior to my Larsen 2/70 Dual Band 5/8 Wave Mag
mounted Vertical, which may not prove that the antenna has the design
6.4dBq gain, but not bad for $15Can ($2US :-) :-) in parts. I leave it
up to the followers of this antenna to tell me what I got right, and
what I got wrong!

5. Build tower mount

Nail the two 1" hose clamps to one end of each of the 40 11/16" wood dowels
that form a 1/2" wave offset support from the tower. These hose clamps will
be used to attach to the tower or mast, so you may wish to use an alternate

mounting strategy depending on your needs. The other end will have the 1/2"
copper pipe clamps nailed (or screwed) to hold the tips of the vertical
Double Zepp structure. A single 120" string is used to provide mechanical
cross support from the top tower side to the bottom antenna side of the
offset supports:

```
          |
          |
          |_____  <- Upper offset mount
          |.   |
          | .  |
   Tower ->| .   |<- Antenna
          |  . |
          |  . |
          |   .     |___
          | .----<____| <- Folded Phasing stub/Feed
          |/Feed   |
          | Line   |
          |    .   |   <- `dotted' line a rough representation of cross
          |     .  |     support string.
          |       .|
          |_____|
          |       <- Lower offset mount
          |
          |
```
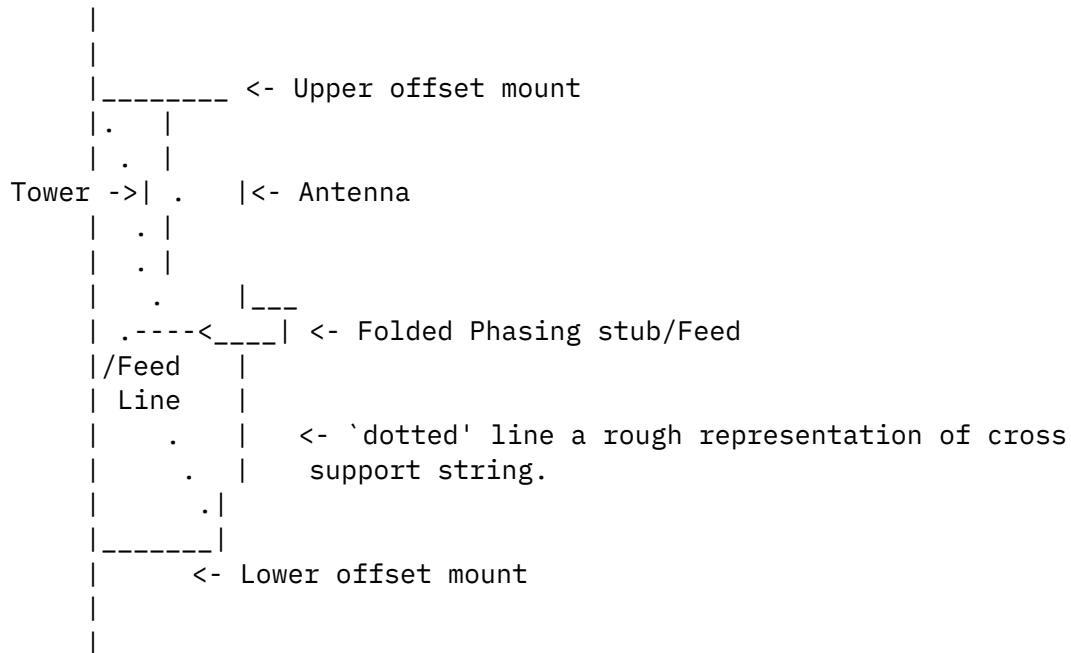
          Figure 4 Tower or Mast mounting schematic

The tower support is not tested, it is -32C (-20F) outside and I will leave it
up to the imagination of the reader how much I despise this fact! I guess I
would not have built this Antenna if I had a warm beach and a hot summer sun
beckoning me out of doors ...

Enjoy, 73 de VE6MGS/Mark -sk-
--
-- Ciao -- Mark Salyzyn mark@ve6mgs.ampr.org/adec23.UUCP finally has a .sig ...
  - Entries to the Amateurs on USENET List: hams-on-usenet@ve6mgs.ampr.ab.ca
  - Postings to rec.radio.info: rec-radio-info@ve6mgs.ampr.ab.ca
  - rec.radio.info administrivia: rec-radio-request@ve6mgs.ampr.ab.ca

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Date: 11 Jan 93 08:10:15 GMT
From: usc!news.bbn.com!olivea!spool.mu.edu!agate!stoll@network.UCSD.EDU
Subject: Stalking the Wily Hacker -- Dayton Hamvention Talk
To: info-hams@ucsd.edu

Hi Gang,

Several hams have asked me about speaking at Dayton;
here's the scoop: Yes, I'll be speaking at the
Dayton Hamvention on Saturday April 24, after dinner.

For more info, don't write me, see the current QST
or contact the Dayton Hamvention folks.

    * * *   * * *   * * *

abstract: STALKING THE WILY HACKER
           Cliff Stoll   K7TA

Someone breaks into your computer. What do you do?
Slam the door? Call the police? Ignore the problem?

When a German hacker broke into our lab, we decided to
silently watch him and quietly track him back. For a year,
we watched as he broke into over forty military computers around the world.
Turned out that he was spy, passing information to the Soviet KGB.

I used the same skills to catch this hacker that you find in
vhf rabbit hunts: direction finding, stealth, and luck.

What techniques did he use to crack into computers? Where
are the holes in our systems? How do you trace someone
hiding in the worldwide computer networks? Who was willing
to help -- and who wasn't?

Cliff's talk, "Stalking the Wily Hacker" will address these
questions. A fun time is guaranteed for all.

The Cuckoo's Egg, the book describing this incident, is on
sale at most good bookstores, and all not-so-good bookstores.
This book tells the true story of tracking a spy through the
maze of computer espionage.

Cliff graduated from Buffalo Public School #61 with a blue
star for good attendence. Later, he repaired pinball
machines, printed T-shirts, and received a PhD in planetary science.
Cliff has appeard on the PBS/NOVA documentary, "The KGB, the CIA,
the Computer and Me". In his spare time, Cliff pieces quilts,
works 40 meter CW, and squeezes lumps of bituminous coal into diamonds.

There are two spelling mistakes in this announcement.

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Date: 11 Jan 93 09:31:18 GMT
From: news-mail-gateway@ucsd.edu
Subject: Stalking the Wily Hacker -- talk at Dayton Hamvention
To: info-hams@ucsd.edu

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star for good attendence. Later, he repaired pinball
machines, printed T-shirts, and received a PhD in planetary science.
Cliff has appeard on the PBS/NOVA documentary,
"The KGB, the CIA, the Computer and Me". In his spare time,
Cliff pieces quilts, works 40 meter CW, and squeezes lumps of
bituminous coal into diamonds.

There are two spelling mistakes in this announcement.

Date: Fri, 8 Jan 93 22:21:52 GMT
From: walter!porthos!blitzen!karayan@uunet.uu.net
To: info-hams@ucsd.edu

References <13412@bnr-rsc.UUCP>, <1993Jan8.154915.11579@ke4zv.uucp>,
<1993Jan8.140926.1@bb1t.monsanto.com>
Subject : CQ GREECE

I need to get some info on amateur radio in Greece. Specifically:

1) What license classes exist in Greece, with what priviledges?

2) What are the requirements for becoming a ham in Greece (exams, etc.)?

3) Being a US amateur, how can I get a Greek license to operate from
Greece?

4) How do Greek hams use Morse code for SV-SV QSOs in Greek? Is there
a Greek version of Morse code and how can I get a copy?
(Need to start practicing now if I want to operate in Greece next
summer :-)

73

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Disclaimer: The opinions expressed here are mine and not my employer's.

End of Info-Hams Digest V93 #46
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